DOCUMENT RESUME

ED 097 090 JC 740 413

AUTHOR	Hall, Gerry
TITLE	A Comparative Study of Specific Skill Requirements of Selected Employers and Clerical Course Content in a Community College District.
INSTITUTION	Nova Univ., Fort Lauderdale, Fla.
PUB DATE	8 Jan 74
NOTE	38p.; Practicum submitted to Nova University in partial fulfillment of requirements for Doctor of Education degree
EDRS PRICE	MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS	*Business Education; Clerical Occupations; College Curriculum; *Community Colleges; Course Content; *Course Evaluation; Doctoral Theses; *Job Skills; Post Secondary Education; Practicums; Questionnaires; *School Industry Relationship
IDENTIFIERS	California; *College of the Sequoias

ABSTRACT

A questionnaire designed to ascertain the typing, office machines, and mathematics computations skills needs of clerical employees was mailed to 107 employers of general clerical workers in the College of Sequoias district. The responses, received from 73.8 percent of the employers representing 1,013 general office employers, were compared with the relative emphases on course content in the college's typing, office machines, and business mathematics courses. The proportions of typing courses assignments related to purchase orders, invoices, purchase requisitions, debits and credits, telegrams, and minutes of meetings significantly exceeded the proportions of job time devoted to these tasks, according to employers. Disproportionately large amounts of classroom time, in contrast with employers' work demands, were being consumed by such typing assignments as tables, business letters, and manuscripts. Course requirements and employers' job requirements coincided in the cases of interoffice memos, legal forms, and index cards. In relationship to employers' stated needs, business mathematics courses devoted disproportionately large amounts of course time to fractional computations and percentage computations. Depreciation computations received less course emphasis than job needs suggested. Similarities were found between course emphasis and job requirements in markup/markdown and interest in business mathematics courses. Fewer than 10 percent of the employers' calculating machines were rotary, whereas half of the office machines course time was devoted to learning rotary calculator operations. (Author/DB)

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

BEST COPY AVAILABLE

ED 097090

A COMPARATIVE STUDY OF SPECIFIC SKILL REQUIREMENTS OF SELECTED EMPLOYERS AND CLERICAL COURSE CONTENT IN A COMMUNITY COLLEGE DISTRICT

SOCIETAL FACTORS

by

Gerry Hall

College of the Sequoias

Dr. Ward Lasher
Cluster Coordinator

JC 740 413

A PRACTICUM PRESENTED TO NOVA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

January 8, 1974

TABLE OF CONTENTS

Page

LIST OF TABLES iii

Chapter

1. INTRODUCTION 1
2. BACKGROUND AND SIGNIFICANCE 3
3. PROCEDURE. 13
4. RESULTS 15
5. RECOMMENDATIONS 26

BIBLIOGRAPHY 30

APPENDIX A 31

APPENDIX B 33

LIST OF TABLES

Table		Page
1.	Minimum Educational Requirements for Employment in General Office Positions	16
2.	Comparison of Intermediate and Advanced Typing Course Job Assignments With Weighted Job Requirements of Employers	18
3.	Comparison of Business Mathematics and Office Machines Course Examination Items With Weighted Job Requirements of Employers . .	20
4.	Degrees of Operating Skill in Typing Required by Employers	23
5.	Degrees of Business Machine Operating Skill Required by Employers	23

CHAPTER I

INTRODUCTION

Curriculum in a junior college should satisfy a variety of needs, the nature of which depends upon the students' and the community's expectations. Thus, college transfer programs should prepare the student for a continuation of his education at a four-year transfer institution with neither loss of units in transferring nor sacrifice of the course content necessary to insure performance at the required academic level of the transfer institution. Remedial curricula should diagnose students' particular learning needs and prescribe the work which will help them overcome their learning deficiencies and bring them to a desired level of understanding and proficiency. Vocational curricula should be designed to reflect realistically both the work-skill needs of the employment market being served by the community college and the ability levels and experience of students who will enter the vocational courses. Implicit in all of these is the hope that the most effective possible teaching methods will be employed to achieve the program's learning objectives.

This paper will report on an investigation which was undertaken to improve a curriculum in the College of the Sequoias' vocational program. More specifically, the study attempted to

ascertain the skill needs of potential employers of the college's general clerical students and compare these results with the content and emphasis of relevant courses. A related objective was to learn whether or not the content of certain clerical skills courses has included difficult concepts which contribute to the high student withdrawal rate but are seldom, if ever, applicable to actual work situations.

The results of the investigation will be used to revise course content where that is indicated as being necessary, particularly in typing, office machines, and business mathematics courses.

CHAPTER II

BACKGROUND AND SIGNIFICANCE

Page 21 of the College of the Sequoias' 1973-74 catalog lists the college's eight specific aims and objectives. In the number one position is the following objective: "To provide comprehensive training to those students who will finish their period of formal education in the community college. This is designed to achieve occupational competence."

Whether or not occupational competence is achieved depends upon the college's success in relating course offerings and substance to students' needs and abilities. A curriculum which does not take into consideration the aptitudes of its students may, as a result, attempt to teach material which is either too easy or too difficult for them. When the latter is the case, frustration, failure, and high dropout rates will result. Related services of the college, such as job placement and counseling, thus may become unavailable to those students who are in greatest need of help. In this regard, Medsker and Tillery have noted that:

> . . . some colleges may have set too high standards for some of their occupational curricula. The carefully developed technical and semiprofessional programs of the community colleges frequently have such high standards that they must compete for students who aspire to transfer to senior colleges. Neglect of appropriate employment preparation for many students of modest ability and

> achievement seriously limits the comprehensiveness of the community college program.[1]

The clerical program in the College of the Sequoias business division is designed, ostensibly, to meet the employment needs of "high-risk" students. Nonetheless, it has been observed that many courses and, of particular interest in this study, those in office machines and business mathematics, contain material which is unnecessarily difficult for students with low verbal and quantitative aptitudes. The material has been defended on the grounds that the college must serve the function of screening out students who would be unable to perform at the levels of performance demanded by employers. In this regard, Mayhew and Ford have observed that:

> The logical outcome of this selectivity is that each level of education has become more of a screening process or hurdle to be overcome than a feasible and compatible program of education geared to humans at a given stage of their development.[2]

The argument has also been advanced that further dilution of course material results in a curriculum which is not of "college level." It is contended that a community college vocational program should consider its unique goals without regard to whether or not the course content compares favorably

---

[1]Leland L. Medsker and Dale Tillery, Breaking the Access Barrier (New York: McGraw-Hill Book Company, 1971), p. 60

[2]Lewis B. Mayhew and Patrick J. Ford, Changing the Curriculum (San Francisco: Jossey-Bass, Inc., 1971), p. 45.

with the college image--a consideration which is apparently of importance to many instructors. Speaking to this point, McGrath observes that:

> We must cease to regard it (the community college) as the first or bottom two years of the four-year undergraduate college, and view it instead as the top or culminating two years of a fourteen-year program comprising the elementary and secondary schools. In no other way can the leaders who are charged with curriculum development in the community colleges attain the necessary freedom for contriving experimental programs to satisfy the needs of a large percentage of American youth.[3]

With respect to the qualitites required in teachers of the types of classes with which the current study is concerned, McGrath feels that: "These teachers must have a genuine desire constantly to improve instruction, and they must develop a keen sensitivity to discovering and satisfying educational needs of the community."[4] Not all community college teachers possess these desired traits, unfortunately. Medsker and Tillery note that, "It seems evident that community colleges still invite through their open doors students for whom no appropriate educational programs exist--and whom some teachers do not welcome."[5]

---

[3]Earl J. McGrath, Universal Higher Education (New York: McGraw-Hill Book Company, 1966), p. 112.

[4]Ibid., p. 119.

[5]Medsker and Tillery, op. cit., p. 61.

Among the reasons why many community college instructors fail to adapt to the educational needs of their students, two are particularly pertinent to the current investigation. First is an incompatibility between instructors' educational value orientations and their students'. Second is the inability or unwillingness to accept the reality of the academic preparation and motivation of incoming students.

With respect to the first source of difficulty in satisfying students' needs, instructors view the acquisition of particular bodies of knowledge as the primary goal. Keats notes, however, that students' parents have different objectives:

> Perhaps the most remarkable aspect of the parental anxiety is that it is not primarily concerned with education. It is concerned with jobs. The national preoccupation with college admission is rooted in a belief that a young man cannot hope to find a good job today unless he has a college diploma.[6]

Community college students reflect the vocational orientations of their parents. In her investigation of the reasons why community college students attend college, Cross asked students to indicate the extent of their agreement with the following statement: "The main reason for continuing your education beyond high school is to prepare for a job that pays well." Seventy-one percent of the respondents agreed with the statement, 26 percent of them strongly.[7]

---

[6]John Keats, The Sheepskin Psychosis (Philadelphia: J. B. Lippincott Company, 1965), p. 15

[7]K. Patricia Cross, The Junior College Student: A Research Description (Princeton: Educational Testing Service, 1968), p. 35-6.

In addition, 62 percent of the students, when asked what kinds of courses they would like to take in community college, indicated a preference for courses related to a possible future job.

While community college teachers and administrators often look upward to the four-year colleges as potential competitors for their students, some educators see the proprietary school as providing the type of training that community college students desire. Writing on the effectiveness of proprietary schools in providing vocational education, Wilms relates the statement by an official in a highly respected proprietary school that community colleges

> . . .just can't train a student in electronics or accounting as well as we can. They have so much pressure to make sure that their courses will transfer to a four-year college that their vocational courses wind up being diluted with general education required by the four-year schools.[8]

Even for the declared vocational students, community colleges find that occupational educational programs must include unrelated courses which are designed to meet general education needs. Noting that proprietary schools are free from such concerns, Shoemaker states that:

> The objective of these schools is straightforward and unembellished by many of the traditional phrases so often found in college catalogs; they exist in order to prepare people for immediate employment in a rather carefully defined occupational field.[9]

---

[8]Wellford W. Wilms, "A New Look at Proprietary Schools," Change, V (Summer, 1973), 7.

[9]Ellwood A. Shoemaker, "The Challenge of Proprietary Schools," Change, V (Summer, 1973), 71.

What all of these studies and observations suggest is that the academic programs designed by community college educators for their students may differ sharply from the community's expectations for its youth. After cataloging a series of contrasting values between academicians and businessmen, Keats concludes with the statement that, "Further examples could be cited, all serving the point that the standards of the academic world are different from those of the workaday world. What the one prizes, the other deplores."[10]

Many community college vocational teachers have difficulty understanding the learning problems and motivational levels of their students because of the word "college" in the name of the institution for which they work. Having been, in most cases, college preparatory students in high school who either went directly to a four-year institution from high school or followed a transfer program at a community college, their orientation is toward the four-year college program. Similarly, their expectations with respect to students' motivation, attitudes, and values frequently are measured by their four-year college experiences. A rigid definition of college standards may result in the instructor's placing primary emphasis upon the preservation of course content which meets arbitrary standards of

---

[10]Keats, op. cit., p. 20.

difficulty rather than upon the goals of students. In this regard, Moore believes that:

> It is more important that the student learns than that the subject matter be preserved in a form the learner cannot deal with quickly and effectively. A professor who refuses to make adjustments in what he teaches so that the learner can understand makes the material more important than the function it is supposed to serve.[11]

Vocational instructors and, more relevant to the present investigation, business instructors, experience difficulty in coping with the motivational levels of their students because of their expectations and their lack of attention to means which will stimulate their students. Quite frequently, they are found to be farthest from the "ideal," academically oriented student. Segner believes that:

> A good argument can be presented for stationing the college's most dynamic and versatile teachers in the remedial classrooms and leaving the less-skilled to teach the more advanced students. After all, in many ways it is more difficult to inspire learning among disadvantaged students.[12]

This investigation seeks answers to two basic questions. First, is the general clerical program at the College of the Sequoias providing training for its students which is relevant to the job needs of firms which are their potential employers? Secondly, is course content unnecessarily difficult in light of

---

[11]William Moore, Jr., Blind Man on a Freeway (San Francisco: Jossey-Bass, Inc., 1971), p. 88.

[12]Ken B. Segner, "Comment," Community College Review. I (July-August, 1973), 3.

employment requirements and students' abilities? With respect to the first question, Dykeman has found that:

> Executives say many of today's courses cover outdated needs and tools. Examples: A business accounting course trains students on manual adding machines to do exercises that require electronic calculators, and typing curriculum without instruction in word processing.[13]

The fact that some clerical programs which, presumably, are designed for low-ability students often make unrealistically high demands is criticized by Hodges who believes that, "A clerical program for special-needs students should operate in an atmosphere where the standards are the standards of business instead of the ordinary standards of the classroom."[14]

Seeking information for business curriculum development from current and potential employers is supported by many writers in business education. The United States Office of Education notes that, "If instruction is to be functionally related to occupational conditions, the need for some sources of current information is clear.[15] Polishook, in advising business education teachers to keep abreast of current business education needs, contends that,

> Every business teacher has this source on hand--businessmen who must stay up to date to remain in business.

---

[13]John B. Dykeman, "Get Down to Business with the Teachers," Modern Office Procedures. XVIII (March, 1973), 8.

[14]Gail T. Hodges, "Clerical Training for Special-Needs Students," Business Education World, L (December, 1969), 2.

[15]U. S. Department of HEW, Office of Education, Organization and Operation of a Local Program of Vocational Education (Buffalo, 1968), p. 54.

> We can learn from them what they want in employee training--in effect, what product they will buy from us. We can then adjust our curriculum offerings accordingly.[16]

The use of well-developed questionnaires, as one means of securing information for use in business education curriculum development, is defended by several writers. Kaisershot believes that the questionnaire survey:

> . . . need not be construed as an inferior, unscientific study of little value. Rather, it is a reliable basis for improving and updating a business curriculum, a student-teaching program, the content within a given subject, or the addition of necessary equipment to do an even more effective job of educating present and future business education students.[17]

Huggins says there are ways in which business educators can make their courses more relevant, such as, ". . . using community resources and speakers, and utilizing information obtained from community surveys to update course content and to revise curriculum."[18]

The present investigation is based on the belief that a public community college must exert every effort to equate the educational demands of its students with the needs as well as

---

[16]Administration and Supervision of Business Education, Eastern Business Teachers Association Yearbook, ed. William M. Polishook (The Eastern Business Teachers Association, 1966), XXXIX, pp. 275-6.

[17]Alfred L. Kaisershot, "A Case for the Follow-Up Study," The Balance Sheet, LIII (March, 1972), 249.

[18]Margaret A. Huggins, "Focus on Tomorrow," The Balance Sheet, LV (October, 1973), 51.

the expectations of the community. This entails the obligation on the part of every instructor to gain as complete an understanding as is possible of the objectives and abilities of his students and to develop course content which reflects this information. For the vocational instructor, this implies the need to go out into the community to ascertain what specific skill levels and course content will best prepare students for the jobs they are seeking. Implicit also is the need to seek the teaching methods which best provide the skill and knowledge needed by students. The investigation will seek to compare current general clerical courses, in terms of both content and skill levels, with the requirements of a representative group of employers of general clerical students in the district. Appropriate recommendations for curriculum revision will be made on the basis of the investigation's findings.

CHAPTER III

PROCEDURE

The College of the Sequoias job placement office records were examined for the purpose of obtaining the names of firms in the college district which had employed students in general clerical positions. In addition, business division instructors provided the names of current and prospective employers of general clerical students. By these means, a list of the names of 107 employers was obtained for a survey of job requirements.

To determine typing skill needs, office machines employed, and mathematical computations required of clerical employees, a questionnaire was developed (appendix A) for mail distribution to the 107 employers. A stamped, return envelope was enclosed with each questionnaire accompanied by a letter describing the purpose of the survey (appendix B).

Each of the three courses with which the study is concerned, typing, office machines, and business mathematics, was analyzed with respect to the emphasis placed on the various units of instruction and the course content. Two methods were employed to gauge course content emphasis. In the case of office machines and business mathematics, examination items on all currently used teacher-made tests were classified according to

content. Proportionate shares for all types of content were calcualted. Instructors in these courses verified that the relative numbers of test items corresponded closely with the degrees of course emphasis for different units of instruction. For the typing courses, instructors' class assignments in intermediate and advanced typing classes were categorized on the basis of the skills they were designed to develop and each category's proportionate share of total class assignments was determined. A comparison will be made between this information and the questionnaire responses, each weighted by the number of general office employees in the respondents' firms, in order to determine the extent to which the two coincide. Conclusions will be made with respect to the relevance of course content to employers' expectations and needs.

CHAPTER IV

RESULTS

Of the 107 questionnaires mailed to employers, 79, or 73.8 percent, were completed and returned. The respondents were employing a total of 1,013 general clerical office workers in their organizations.

Table 1 presents information provided by employers in response to the questionnaire item which asked for the minimum education required for entry to general office positions. For 796, or 91.1 percent, of the positions, either a high school diploma or less formal education was required. While 52, or 5.2 percent, required some college, only 30, or 3.0 percent, of the 796 general clerical positions required an associate in arts degree for initial employment. Only 7, or 0.7 percent cited the bachelors degree as an entry requirement.

Employers were asked to indicate the kinds of jobs typed in their offices and their frequency of performance, either never, occasionally, or frequently. For each typing job, the number of typing course assignments in all intermediate and advanced typing classes in the College of the Sequoias business division are shown in Table 2. In the last six columns, the employers' responses of "occasionally" and "frequently,"

BEST COPY AVAILABLE

TABLE 1

MINIMUM EDUCATIONAL REQUIREMENTS
FOR EMPLOYMENT IN GENERAL OFFICE POSITIONS

Educational Level	Number	Percent
No Minimum	26	2.6
8th Grade	85	8.5
High School Diploma	796	80.0
Some College	52	5.2
Junior College Degree	30	3.0
Bachelor's Degree	7	0.7
Total	996	100.0

each weighted by the number of general office workers employed, are presented in addition to similar totals for responses by job.

Several interesting contrasts appear in Table 2. The proportions of typing course assignments related to purchase orders, invoices, purchase requisitions, debits and credits, telegrams, and minutes of meetings are far less than the proportions of weighted "frequently" responses for these jobs by employers. For example, whereas only 7, or 1.3 percent, of the typing course assignments deal with the preparation of purchase orders, employers' weighted responses of 186, or 6.4 percent, indicated that such work was frequently required. Similarly, whereas only 2, or 0.4 percent of the course assignments dealt with debits and credits, 213, or 7.4 percent, of employers' weighted responses indicated that such work was frequently required.

Unnecessarily large amounts of classroom time may be devoted to some types of jobs, according to the responses for tables, business letters, and manuscripts. Fully 73.6 percent of all typing course assignments are represented by these jobs whereas only 39.0 percent of the weighted responses indicated that such typing jobs are frequently required of general office employees. When the weighted "occasionally" and "frequently" responses are combined for these jobs, their percentage is only 31.4 percent of the total job assignments.

BEST COPY AVAILABLE

TABLE 2

COMPARISON OF INTERMEDIATE AND ADVANCED TYPING COURSE JOB ASSIGNMENTS WITH WEIGHTED JOB REQUIREMENTS OF EMPLOYERS*

Jobs	Typing Course Assignments		Typing Work Required					
			Occasionally		Frequently		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Purchase Orders	7	1.3	154	9.7	186	6.4	340	7.6
Invoices	5	.9	146	9.2	240	8.3	386	8.6
Purchase Requisitions	4	.7	164	10.4	130	4.5	294	6.6
Debits and Credits	2	.4	154	9.7	213	7.4	367	8.2
Telegrams	4	.7	123	7.8	111	3.8	234	5.2
Interoffice Memos	52	9.4	195	12.5	264	9.1	459	10.3
Tables	101	18.2	146	9.2	149	5.2	295	6.6
Minutes of Meetings	22	4.0	182	11.5	218	7.5	400	8.9
Business Letters	186	33.3	75	4.7	493	17.2	568	12.8
Postal Cards	6	1.1	184	11.6	137	4.7	321	7.2
Manuscripts & Reports	123	22.1	58	3.7	480	16.6	538	12.0
Others:								
Insurance					41	1.4	41	.9
Legal	11	2.0			72	2.5	72	1.6
Financial	4	.7			60	2.1	60	1.3
Index Cards	23	4.1			83	2.9	83	1.9
Miscellaneous Forms	6	1.1			12	.4	12	.3
Total	556	100.0	1,581	100.0	2,889	100.0	4,470	100.0

*Employers' responses are weighted by the numbers of general clerical workers in their employ.

In a few types of jobs, course assignments and job requirements appeared to correspond rather closely. Examples of this were course assignments for interoffice memos, with 9.4 percent of the course assignments and 9.1 percent of the weighted "frequently" responses; legal forms, with 2.0 percent and 2.5 percent course assignment and weighted employer "frequently" responses, respectively, and index cards, with 4.1 percent and 2.9 percent course assignment and weighted "frequently" responses, respectively.

Item 8 of the questionnaire asked employers to indicate the types of computations performed by general office employees in their offices. Their responses, weighted by the number of general office employees of each respondent, are presented in the last six columns in Table 3. Presented in the first six columns of the same table are the numbers of examination items in business mathematics and office machines courses for the various types of computations. Combined totals for both courses are also presented.

Several contrasts between course emphasis and employers' needs may be noted. Whereas business mathematics courses would appear to place great emphasis on computations involving fractions, with 30.1 percent of the examination items dealing with fractions, only 6.8 percent of the weighted responses indicated that such computations are frequently performed. Office machines course examinations, by comparison,

BEST COPY AVAILABLE

TABLE 3

COMPARISON OF BUSINESS MATHEMATICS AND OFFICE MACHINES COURSES' EXAMINATION ITEMS WITH WEIGHTED JOB REQUIREMENTS OF EMPLOYERS*

	Business Math Exam Items		Office Machines Exam Items		Combined Math and Machines		Computations Reported by Employers					
							Occasionally		Frequently		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Fractions	312	30.1	56	5.4	368	17.8	344	14.4	164	6.8	508	10.5
Decimals	169	16.2	322	31.3	491	23.8	192	8.0	370	15.2	562	11.7
Percentage	244	23.4	138	13.4	382	18.4	144	6.0	178	7.3	322	6.7
Markup/Down	49	4.7	112	10.9	161	7.8	159	6.7	151	6.2	310	6.4
Discounts	79	7.6	242	23.5	321	15.5	187	7.8	173	7.1	360	7.5
Interest	113	10.9	64	6.2	177	8.5	180	7.5	221	9.1	401	8.3
Depreciation	15	1.4	-	-	15	.7	119	5.0	184	7.6	303	6.3
Insurance	24	2.3	10	1.0	34	1.6	190	8.0	198	8.2	388	8.1
Payroll	23	2.2	24	2.3	47	2.3	149	6.2	311	12.8	460	9.5
Investments	-	-	-	-	-	-	173	7.2	95	3.9	268	5.6
Weights/Measures	13	1.2	-	-	13	.6	197	8.2	87	3.6	284	5.9
Tables	-	-	35	2.6	35	1.7	355	15.0	296	12.2	651	13.5
Proration	-	-	27	3.4	27	1.3						
Total	1,041	100.0	1,030	100.0	2,071	100.0	2,389	100.0	2,428	100.0	4,817	100.0

*Employers' responses weighted by the numbers of general office workers in their employ.

devoted only 5.4 percent of their items to fractions. Percentage computations, which accounted for 23.4 percent and 13.4 percent of test items in business mathematics and office machines courses, respectively, comprised only 7.3 percent of the weighted "frequently" responses by employers. In the case of decimal computations, whereas business mathematics course emphasis appeared to be similar to job requirements, office machines emphasis, with decimal problems representing 31.3 percent of the examination items, far exceeded the 15.2 percent of weighted "frequently" responses. A similar result was noted for discount computations. Here, the 7.6 percent of business mathematics test items corresponded closely with the 7.1 percent of employers' "frequently" responses. In office machines classes, however, discount computations comprised 23.5 percent of test items.

Depreciation, with negligible emphasis in both business mathematics and office machines courses, received, by contrast, a relatively high percentage, 7.6, of the employers' responses. This was true also of the employers' responses to insurance computations, payroll computations, investment computations, and tables. In each of these, employers indicated a job need which was considerably greater than the business mathematics and office machines course emphasis.

Types of computations for which there appeared to be similarity between course emphasis and job requirements were those in markup/markdown and interest.

Although it was not one of the objectives of the current study, the results reported in Table 3 point up some rather important differences between the types of computations emphasized in business mathematics and the office machines courses as seen, for example, in the cases of fractions, decimals, percentage, and discounts.

In Item 9 of the questionnaire, the employers were asked to indicate whether their general office employees were required to be skilled, possess some skill, or to possess no skill in the operation of different kinds of typewriters and three general classifications of calculating machines. In retrospect, it is realized that the value of the data received on this item would have been greatly enhanced if the questionnaire had included definitions of the terms "skilled," "some skill," and "no skill." The data on typing skills for this item are presented in Table 4 and those for calculating machines in Table 5. In both tables, the number of responses shown represents the number of general office typewriters or office machines.

In Table 4, employers' responses indicate that in over three-fourths of the general office positions in which typing work on electric machines is required, skilled typists are preferred. Skilled typists were desired in 39.3 percent of the cases where manual typewriters are used, with some skill being required in 59.0 percent of the instances. In virtually none

BEST COPY AVAILABLE

TABLE 4

DEGREES OF OPERATING SKILL IN TYPING
REQUIRED BY EMPLOYERS

Type of Machine	Degree of Skill: Skilled Number	Skilled Percent	Some Skill Number	Some Skill Percent	No Skill Number	No Skill Percent	Total Number	Total Percent
Manual Typewriter	94	39.3	141	59.0	4	1.7	239	100.0
Electric Typewriter	226	78.8	60	20.9	1	0.3	287	100.0
Total	320	60.8	201	38.2	5	1.0	526	100.0

TABLE 5

DEGREES OF BUSINESS MACHINE OPERATING SKILL
REQUIRED BY EMPLOYERS

Type of Machine	Degree of Skill: Skilled Number	Skilled Percent	Some Skill Number	Some Skill Percent	No Skill Number	No Skill Percent	Total Number	Total Percent
Electronic Calculator	106	57.3	73	39.5	6	3.2	185	100.0
Printing Calculator	100	50.8	96	48.7	1	0.5	197	100.0
Rotary Calculator	24	63.2	14	36.8	0	-	38	100.0
Total	230	54.7	183	43.6	7	1.7	420	100.0

of the cases, only 1.0 percent, was no skill requirement indicated for job entry. Although a precise definition of "skill" was not provided to employers, it is being assumed that most employers interpreted the term to mean speed and accuracy of performance. Typing course assignments at the intermediate and advanced levels, based upon job assignments and time devoted to lessons, indicate that only 20 percent of the course emphasis is on improvement of speed and accuracy while the balance is devoted to familiarizing students with a wide variety of forms they might have to type in different employment situations. However, because these data were obtained from intermediate and advanced typing classes, it could be assumed that speed and accuracy had received greater emphasis in elementary typing classes.

An unexpected result of the survey is the fact that many manual typewriters are still in use by employers in the college district. The total column in Table 4 indicates that 239, or 45.4 percent, of the 526 typewriters in use are manual. In contrast, all of the typewriters in the College of the Sequoias typing classrooms are electric.

Information on business machines used in skill requirements, presented in Table 5, suggest one important contrast between course emphasis and employers' needs. Of the total of 420 calculating machines on which respondents indicated the degree of skill required, only 38, or 9.1 percent, required

either skilled operation or some skill with rotary calculators, but over 90 percent required some degree of skill in the operation of printing and electronic calculators. Office machines courses at the College of the Sequoias are currently devoting 50 percent of class time to learning the operation of rotary calculators with the balance of the time divided about equally between the electronic and printing calculators. As in the case of typewriter operation, virtually none of the employers indicated that general clerical workers with no skill in the use of calculating machines were employed. It would appear that emphasis upon the development of a high-level of skill in the operation of calculators should be continued.

CHAPTER V

RECOMMENDATIONS

On the basis of the information acquired in the current study, the following recommendations and suggestions concerning the College of the Sequoias' general clerical curriculum are made:

1. If formal education beyond high school is required by so few employers of general clerical employees, what should be the purpose of the college's general clerical program? It is suggested that the program should provide increased emphasis on the development of maturity, an understanding of human relations, an exploration of personal aptitudes and interests, some exposure to the humanities, and similar subjects of study. These emphases may be considered to have value comparable to, or possibly even greater than, the perfection of clerical skills, a number of which students possess upon entering the college. Some students, of course, have had no prior clerical business training and should have an opportunity to develop the basic skills required for employment.
2. Modify the amount of time and emphasis devoted to various work assignments in typing courses as follows:
   a. Increase the number of assignments involving the preparation of purchase orders, invoices, requisitions,

debits and credits, telegrams, and minutes of meetings to correspond more closely with the importance of these functions for general clerical workers.

b. Reduce the number of class assignments which require the preparation of tables, business letters, and manuscripts to correspond more accurately with employers' indications of job requirements.

3. Business mathematics course content should be revised to reflect the types of computations employers indicate their clerical employees perform. Some recommended changes are:

a. Reduce the course emphasis on both fractions and percentage computations to a level that more nearly approximates the requirements of local employers' clerical positions.

b. Increase the emphasis placed upon depreciation, insurance, payroll, and investments computations.

4. Office machines course content should be changed as follows:

a. Reduce course content devoted to percentage, decimal, and discount computations in accordance with employer job requirements.

b. Increase the emphasis on depreciation, insurance, payroll, and investment computations to reflect employers' needs in clerical positions.

5. Because of the close relationship between the use of different types of business calculating machines and an understanding of various business mathematics computations, the need to develop a close correlation between the two courses seems obvious. It is recommended that a single course be developed which integrates the subject matter content of the two courses and reflects the types of skills employers consider most essential to the performance of clerical jobs in their organizations.
6. The fact that close to one-half of the typewriters being used in responding employers' establishments are manual should be taken into account when the college's business division is considering major equipment purchases.
7. The college should continue to devote attention to the development of a high level of skill in the operation of calculating machines. However, the classes should reduce the amount of time devoted to the use of rotary calculators, with correspondingly greater amounts of time being made available to the development of skill in printing and electronic calculators. In addition to providing students with training on the kinds of calculating machines most commonly provided by their potential

employers, a reduction in the emphasis on rotary calculators would have another value. Rotary calculators are more difficult to operate, have the least transfer value to other calculating machines, and are less efficient in solving mathematical problems. The very complex mechanics involved in operating the rotary calculator often are the cause of high dropout rates amoung the less capable office machines students. A de-emphasis on rotary calculator skill may effect an increase in successful completion of office machines classes.

BIBLIOGRAPHY

"Administration and Supervision of Business Education," Eastern Business Teachers Association Yearbook XXXIX, (ed. William M. Polishook,) The Eastern Business Teachers Association, 1966.

Cross, K. Patricia. The Junior College Student: A Research Description, Princeton: Educational Testing Service, 1968.

Dykeman, John B. "Get Down to Business With the Teachers," Modern Office Procedures, XVIII (March, 1973), 8.

Hodges, Gail T. "Clerical Training for Special-Needs Students," Business Education World, L (December, 1969), 2.

Huggins, Margaret A. "Focus on Tomorrow," The Balance Sheet, LV (October, 1973), 51.

Kaisershot, Alfred L. "A Case for the Follow-Up Study," The Balance Sheet, LIII (March, 1972), 249.

Keats, John. The Sheepskin Psychosis. Philadelphia: J. B. Lippincott Co., 1965.

McGrath, Earl J. Universal Higher Education. New York: McGraw-Hill Book Co., 1966.

Mayhew, Lewis B., and Ford, Patrick J. Changing the Curriculum. San Francisco: Jossey-Bass, Inc., 1971.

Medsker, Leland L. and Tillery, Dale. Breaking the Access Barrier. New York: McGraw-Hill Book Co., 1971.

Moore, William, Jr. Blind Man on a Freeway. San Francisco: Jossey-Bass, Inc., 1971.

Segner, Ken B. "Comment," Community College Review, I (July-August, 1973), 3.

Shoemaker, Ellwood A. "The Challenge of Proprietary Schools," Change, V (Summer, 1973), 71.

Wilms, Wellford, W. "A New Look at Proprietary Schools," Change, V (Summer, 1973), 7.

U. S. Department of HEW, Office of Education, Organization and Operation of a Local Program of Vocational Education. Buffalo: Government Printing Office, 1968.

APPENDIX A

BEST COPY AVAILABLE

Name of Business _____

Number of Office Employees _____

Title of Person Completing Form _____

	Secretarial	General Office
1. Number of employees		
2. Length of service of your office employees:		
less than 1 year		
1 - 3 years		
4 or more years		
3. Minimum education to be employed by your firm:		
8th grade		
high school diploma		
some college		
junior college degree		
AB degree		
4. Minimum experience to be employed by your firm:		
no experience		
less than 1 year		
over 3 years		

5. What jobs are typed in your office? (Please indicate the frequency.)

	Never	Occasionally	Frequently
purchase orders			
invoices			
purchase requisitions			
debits and credits			
telegrams			
interoffice memos			
tables			
minutes of meetings			
business letters			
postal cards			
manuscripts and reports			
others:			
_____			
_____			
_____			
_____			

6. Please list the type of employment tests you use in determining the qualifications of an applicant for employment.

_____

_____

_____

7. What, if any, recurring weaknesses do you find in your typists?

_____

_____

_____

Other comments:

_____

_____

_____

BEST COPY AVAILABLE

8. Indicate the types of computations done in your office:

	Never	Occasionally	Frequently
fractions			
decimals			
percentage			
markup and markdown			
discounts			
interest			
depreciation			
insurance			
payroll			
investments			
weights and measures			
tables			
interest			
chain discount			
decimal equivalents			

9. Indicate the number of machines used in your office and the degree of operating skill required for employment with your firm:

	No.	Skilled	Some Skill	No Skill
TYPEWRITERS				
Manual				
Remington-Rand				
Smith-Corona Marchant				
Olivetti-Underwood				
Royal				
Other (Name brand)				
Electric				
Royal				
Remington-Rand				
Olivetti-Underwood				
Smith-Corona				
Flexowriter				
IBM Selectric				
IBM Standard				
IBM Executive				
IBM MTST				
IBM Magnetic Card				
Varityper				
Justowriter				
Auto-typist				
Other (Name brand)				
OTHER BUSINESS MACHINES				
Printing Calculators				
Remington				
Victor				
Friden				
Marchant				
Olivetti				
Monroe				
Other (Name brand)				
Electronic Calculators				
Victor				
Burroughs				
Friden				
Marchant				
Monroe				
Other (Name brand)				
Rotary Calculators				
Monroe				
Friden				
Marchant				
Other (Name brand)				

APPENDIX B

BEST COPY AVAILABLE

LINCOLN H. HALL, Dean of Instructio
VERNON J. SILVA, Dean of Student Personn
RICHARD JACOBSEN, Assistant to Preside
WILLIAM BETTENCOURT, Dean of Me
LOIS A. HOPKINS, Dean of Wome
LeROY A. BERG, Dean of Evening Colle

COLLEGE OF THE SEQUOIAS
Mooney Boulevard, Visalia, California 93277

October 26, 1973

Dear Office Manager:

We in the Business Division of the College of the Sequoias want to serve our community and district to the best of our ability. So that we may do this, we are asking a few of our most representative businessmen to answer the enclosed questionnaire and return it to us. In this way, we hope to know what your requirements are for your employees.

Won't you please take a few minutes and complete this questionnaire and return it in the addressed envelope that is enclosed. Feel welcome to make any comments you think might be of assistance to us in training our business students. We appreciate your help.

Sincerely yours,

COLLEGE OF THE SEQUOIAS

Michael Flaherty, Chairman
Business Division

ENCL.

UNIVERSITY OF CALIF.
LOS ANGELES

NOV 22 1974

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION